

**Commonwealth of Massachusetts
Center for Health Information & Analysis (CHIA)
Non-Government Agency Application for Data**

This application is to be used by all applicants, except Government Agencies, as defined in 957 CMR 5.02.

NOTE: In order for your application to be processed, you must submit the required application fee. Please consult the fee schedules for APCD and Case Mix data for the appropriate fee amount. A remittance form with instructions for submitting the application fee is available on the CHIA website.

I. GENERAL INFORMATION

APPLICANT INFORMATION	
Applicant Name:	Michael McManus, MD, MPH
Title:	Senior Associate in Critical Care Medicine and Perioperative Anesthesia, Boston Children's Hospital Associate Professor of Anaesthesia, Harvard Medical School
Organization:	Boston Children's Hospital – Department of Anesthesia
Project Title:	Understanding pediatric care trends in Massachusetts between 2002 and 2013
Date of Application:	May 28, 2014
Project Objectives (240 character limit)	Quantify, trend, and model the variability in demand and access to pediatric hospital care across Massachusetts
Project Research Questions (if applicable)	1. What are the key epidemiological differences between pediatric and adult hospital care in MA? 2. What was the impact of health care reform on pediatric hospital care? 3. Is there a robust metric for quantifying access to pediatric care in different regions areas? 4. What is the potential impact of hospital pediatric service closures.

I. PROJECT SUMMARY

Briefly describe the purpose of your project and how you will use the requested CHIA data to accomplish your purpose.

This project aims to quantify and understand the demand for and access to pediatric care in hospitals throughout MA. By modeling trends, we hope to inform future policy decisions related to hospital expansion, consolidation, and closure. By examining the impact of 2006 health care reform, we hope to anticipate the impact of the Affordable Care Act (ACA) on pediatric care across the country.

Using the Case Mix data from 2002-2013 we will investigate the differences in the care utilized by adults and children across the state. Because policy decisions tend to follow adult needs, but the needs of

children can be significantly different, we will investigate disparities between these two groups in terms of outcomes, access to care, discharges, and readmissions. We will investigate the impact of MA comprehensive health care reform on the state's pediatric healthcare system, both in terms of usage and outcomes. We will use spatio-temporal statistical methods to explore geographical and temporal variations in care while attempting to create an overall picture of the condition and evolution the healthcare system in the state.

Using tools from systems science and network theory, we will model the network of hospitals throughout MA including patient flows among hospitals at different levels of care. A primary goal will be formulation of a robust metric for policy makers to understand and measure the availability of pediatric care in different areas. We hope to promote a more global understanding of the dynamics and driving factors behind the differences in the efficiency and quality of (pediatric) care across the state. All models will be tested and validated using CHIA data, allowing us to test policies aimed at improving the efficiency and effectiveness of the pediatric care in the state.

II. FILES REQUESTED

Please indicate the databases from which you seek data, the Level(s) and Year(s) of data sought.

ALL PAYER CLAIMS DATABASE	Level 1 ¹ or 2 ²	Single or Multiple Use	Year(s) Of Data Requested Current Yrs. Available 2009 - 2012
<input type="checkbox"/> Medical Claims	<input type="checkbox"/> Level 1 ³ <input type="checkbox"/> Level 2	Select...	<input type="checkbox"/> 2009 <input type="checkbox"/> 2010 <input type="checkbox"/> 2011 <input type="checkbox"/> 2012
<input type="checkbox"/> Pharmacy Claims	<input type="checkbox"/> Level 2	Select...	<input type="checkbox"/> 2009 <input type="checkbox"/> 2010 <input type="checkbox"/> 2011 <input type="checkbox"/> 2012
<input type="checkbox"/> Dental Claims <input type="checkbox"/> Member Eligibility <input type="checkbox"/> Provider <input type="checkbox"/> Product	<input type="checkbox"/> Level 2 <input type="checkbox"/> Level 2 <input type="checkbox"/> Level 2 <input type="checkbox"/> Level 2	Select... Select... Select... Select...	<input type="checkbox"/> 2009 <input type="checkbox"/> 2010 <input type="checkbox"/> 2011 <input type="checkbox"/> 2012

CASEMIX	Level 1 - 6	Fiscal Years Requested
Inpatient Discharge	<input type="checkbox"/> Level 1 – No Identifiable Data Elements <input checked="" type="checkbox"/> Level 2 – Unique Physician Number (UPN) <input type="checkbox"/> Level 3 – Unique Health Information Number (UHIN)	1998-2013 Available (limited data 1989-1997) 2002-2013

¹ Level 1 Data: De-identified data containing information that does not identify an individual patient and with respect to which there is no reasonable basis to believe the data can be used to identify an individual patient. This data is de-identified using standards and methods required by HIPAA.

² Level 2 (and above) Data: Includes those data elements that pose a risk of re-identification of an individual patient.

³ Please note that Level 1 APCD data is not available as of 4/30/2014. This is scheduled to be available later in 2014.

	<input type="checkbox"/> Level 4 – UHIN and UPN <input type="checkbox"/> Level 5 – Date(s) of Admission; Discharge; Significant Procedures <input type="checkbox"/> Level 6 – Date of Birth; Medical Record Number; Billing Number	
Outpatient Observation	<input type="checkbox"/> Level 1 – No Identifiable Data Elements <input checked="" type="checkbox"/> Level 2 – Unique Physician Number (UPN) <input type="checkbox"/> Level 3 – Unique Health Information Number (UHIN) <input type="checkbox"/> Level 4 – UHIN and UPN <input type="checkbox"/> Level 5 – Date(s) of Admission; Discharge; Significant Procedures <input type="checkbox"/> Level 6 – Date of Birth; Medical Record Number; Billing Number	2002-2012 Available (2013 available 8/1/14) 2002-2013
Emergency Department	<input type="checkbox"/> Level 1 – No Identifiable Data Elements <input checked="" type="checkbox"/> Level 2 – Unique Physician Number (UPN) <input type="checkbox"/> Level 3 – Unique Health Information Number (UHIN) <input type="checkbox"/> Level 4 – UHIN and UPN; Stated Reason for Visit <input type="checkbox"/> Level 5 – Date(s) of Admission; Discharge; Significant Procedures <input type="checkbox"/> Level 6 – Date of Birth; Medical Record Number; Billing Number	2000-2012 Available (2013 available 9/1/14) 2002-2013

III. FEE INFORMATION

Please consult the fee schedules for APCD (Administrative Bulletin 13-11) and Case Mix data (Administrative Bulletin 13-09) and select from the following options:

APCD Applicants Only

- ☐ Academic Researcher
☐ Others (Single Use)
☐ Others (Multiple Use)

Case Mix Applicants Only

- ☒ Single Use
☐ Limited Multiple Use
☐ Multiple Use

Are you requesting a fee waiver?

- ☐ Yes
☒ No

If yes, please submit a letter stating the basis for your request. Please refer to the fee schedule for qualifications for receiving a fee waiver. If you are requesting a waiver based on the financial hardship provision, please provide documentation of your financial situation. Please note that non-profit status alone isn't sufficient to qualify for a fee waiver.

IV. REQUESTED DATA ELEMENTS [APCD Only]

State and federal privacy laws limit the use of individually identifiable data to the minimum amount of data needed to accomplish a specific project objective. Please use the [APCD Data Specification Workbook](#) to identify which data elements you would like to request and attach this document to your application.

V. MEDICAID DATA [APCD Only]

Please indicate here whether you are seeking Medicaid Data:

- ☐ Yes
☒ No

Federal law (42 USC 1396a(a)7) restricts the use of individually identifiable data of Medicaid recipients to uses that are directly connected with the administration of the Medicaid program. If you are requesting Medicaid data from Level 2 or above, please describe in detail why your use of the data meets this requirement. Applications requesting Medicaid data will be forwarded to MassHealth for a determination as to whether the proposed use of the data is directly connected to the administration of the Medicaid program. MassHealth may impose additional requirements on applicants for Medicaid data as necessary to ensure compliance with federal laws and regulations regarding Medicaid.

VI. REQUESTS PURSUANT TO 957 CMR 5.04

If you are a payer, provider, provider organization or researcher seeking access to Level 1 (de-identified) data, please describe how you will use such data for the purposes of lowering total medical expenses, coordinating care, benchmarking, quality analysis or other administrative research purposes. Please provide this information below.

We will use the data both to quantify the current state of the pediatric care in the state and to validate models that could increase the quality and coverage of the access to the healthcare system.

VII. FILTERS

If you are requesting APCD elements from Level 2 or above, describe any filters you are requesting to use in order to limit your request to the minimum set of records necessary to complete your project. (For example, you may only need individuals whose age is less than 21, claims for hospital services only, or only claims from small group projects.)

APCD FILE	DATA ELEMENT(S) FOR WHICH FILTERS ARE REQUESTED	RANGE OF VALUES REQUESTED
Medical Claims		

Pharmacy Claims		
Dental Claims		
Membership Eligibility		
Provider		
Product		

VIII. PURPOSE AND INTENDED USE

1. Please explain why completing your project is in the public interest.

This project will quantify the access and quality of the pediatric healthcare in the state, and its results will have to policy-relevant implications in those areas.

2. **Attach** a brief (1-2 pages) description of your research methodology. (This description will not be posted on the internet.)
3. Has your project received approval from your organization's Institutional Review Board (IRB)? Please note that CHIA will not review your application until IRB documentation has been received (if applicable).
 - ☐ Yes, and a copy of the approval letter is attached to this application.
 - ☐ No, the IRB will review the project on _____.
 - ☒ No, this project is not subject to IRB review.
 - ☐ No, my organization does not have an IRB.

IX. APPLICANT QUALIFICATIONS

1. Describe your qualifications to perform the research described or accomplish the intended use of CHIA data.

Dr. McManus holds a Masters in Public Health from Harvard and has been involved in numerous public health projects, including two commissioned by MA DPH to investigate the problem of hospital crowding and ambulance diversion. Those highly successful efforts involved large datasets and computer modeling similar to the work planned here. In addition, he served from 2006 to 2012 on the MA Cost and Quality Council Advisory Committee as the Governor's pediatric representative and also as a member of that body's Executive Committee. In connection with those positions, he has previously worked with the MA hospital case mix data to monitor the impact of health care reform on children. Through this work and his hospital administrative responsibilities, Dr. McManus has gained experience with data safety and was included as an original member of the MA All Payer Claims Data Release Board. Finally, as President of the Massachusetts Chapter of the American Academy of Pediatrics and member of the AAP's National Committee of State Government Affairs, he is familiar with the special interests and changing needs of children that will be the focus of these projects.

Dr. Urbano França received a PhD in Theoretical Physics in 2012 from the University of Valencia with research collaborations and research visits at different universities, including the Harvard-Smithsonian Center for Astrophysics, where he was a visiting scholar between 2009 and 2011. Currently he is a Research Fellow at the Boston Children's Hospital working with computational public health. During his

PhD studies he has worked with data analysis of cosmological data and modeling of physical and dynamical systems. More recently his research has focused on the modeling of complex social systems and social media analysis, where he has worked to understand spatial and temporal patterns in large social networks datasets.

2. Attach résumés or curricula vitae of the applicant/principal investigator, key contributors, and of all individuals who will have access to the data. (These attachments will not be posted on the internet.)

X. DATA LINKAGE AND FURTHER DATA ABSTRACTION

1. Does your project require linking the CHIA Data to another dataset?
☒ Yes
☐ No
2. If yes, will the CHIA Data be linked to other patient level data or with aggregate data (e.g. Census data)?
☐ Patient Level Data
☒ Aggregate Data
3. If yes, please identify all linkages proposed and explain the reasons(s) that the linkage is necessary to accomplish the purpose of the project. Please be specific in describing vvhich data elements will be linked to outside datasets and how this will be accomplished.

We will link the dataset to Census data, using zipcodes, to study the geographical variability of care and the areas served by different hospitals.

4. If yes, please identify the specific steps you will take to prevent the identification of individual patients in the linked dataset.

Since we will be dealing with aggregated data, linking it to Census data should not identify individual patients. Moreover, essentially all the results will be discussed in publications at the county level. Nevertheless, particular regions with fewer than 20 patients will not be statistically reported in any publication or presentation of the results.

XI. PUBLICATION / DISSEMINATION / RE-RELEASE

1. Describe your plans to publish or otherwise disclose CHIA Data, or any data derived or extracted from such data, in any paper, report, website, statistical tabulation, seminar, conference, or other setting.

We plan to publish our results in peer-reviewed journals, and discuss them in seminars and conferences.

2. Will the results of your analysis be publicly available to any interested party? Please describe how an interested party will obtain your analysis and, if applicable, the amount of the fee.

Yes, the results will be made available to any interested party free of any charge upon contacting the researchers.

3. Will you use the data for consulting purposes?

☐ Yes
☒ No

4. Will you be selling standard report products using the data?

☐ Yes
☒ No

5. Will you be selling a software product using the data?

☐ Yes
☒ No

6. If you have answered "yes" to questions 3, 4 or 5, please describe the types of products, services or studies.

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XII. USE OF AGENTS AND/OR CONTRACTORS

Third-Party Vendors. Provide the following information for all agents and contractors who will work with the CHIA Data.

Company Name:	
Contact Person:	
Title:	
Address:	
Telephone Number:	
E-mail Address:	
Organization Website:	

7. Will the agent/contractor have access to the data at a location other than your location or in an off-site server and/or database?

☐ Yes
☐ No

8. Describe the tasks and products assigned to this agent or contractor for this project.

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9. Describe the qualifications of this agent or contractor to perform such tasks or deliver such products.

10. Describe your oversight and monitoring of the activity and actions of this agent or subcontractor.